

Amendments to the Drawings:

Please substitute the attached 3 sheets (Figs. 1-3) of formal drawings for the informal drawings originally filed with the application. A separate Transmittal of Formal Drawings is submitted.

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

The specification has been amended on pages 1 and 3.

Claims 5-7 are cancelled.

Claims 8-19 are being added.

This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-4 and 8-19 are now pending in this application.

Drawings

The drawings are objected to for containing broken lines. Applicants submit new formal drawings with the attached Transmittal of Formal Drawings. Withdrawal of the objection to the drawings is respectfully requested.

Specification

The specification is objected to for not containing an abstract on a separate sheet. To advance prosecution of this application, Applicants have attached a new abstract to this response.

The specification is objected to for not containing subtitles. The specification has been amended on pages 1 and 3 to add subtitles. Withdrawal of these objections is respectfully requested.

Rejections under 35 U.S.C. § 102

Claims 1, 4, and 5 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,244,256 (hereafter “Wall et al.”). This rejection is respectfully traversed as it may be applied against amended claim 1.

Amended claim 1 recites an apparatus for cooling charge air and exhaust gas that includes a first heat exchanger, a second heat exchanger, and a third heat exchanger, “wherein the first heat exchanger and the second heat exchanger are separate heat exchangers and are formed as a structural unit.”

Wall et al. discloses a recirculated exhaust gas coolant system that includes a charge air cooler 20 and exhaust gas coolers 36, 38. See Wall et al. at col. 3, lines 3-17. Wall et al. does not disclose that the charge exhaust gas coolers 36, 38 is formed as a structural unit. Therefore, Wall et al. does not disclose all of the limitations recited by amended claim 1. Claim 4 depends from claim 1 and is allowable for at least the same reasons as claim 1. Withdrawal of this rejection is respectfully requested.

Claim 2 is rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,742,335 (hereafter “Beck et al.”). This rejection is respectfully traversed as it may be applied against amended claim 2.

Amended claim 2 recites an apparatus for cooling charge air and exhaust gas that includes a first heat exchanger, a second heat exchanger, and a third heat exchanger, “wherein at least two of the first and/or the second and/or the third heat exchanger are formed as a structural unit.”

Beck et al. discloses an EGR control system that includes a charge air cooler 62 and an EGR cooler 78. See Beck et al. at col. 9, lines 4-30. Beck et al. does not disclose a third heat exchanger, nor does Beck et al. disclose that “at least two of the first and/or the second and/or the third heat exchanger are formed as a structural unit.” Therefore, Beck et al. does

not disclose all of the limitations recited by amended claim 2. Withdrawal of this rejection is respectfully requested.

Claim 3 is rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,179,892 (hereafter “Heydrich”). This rejection is respectfully traversed as it may be applied against amended claim 3.

Amended claim 3 recites an apparatus for cooling charge air and exhaust gas that includes a first heat exchanger, “a second heat exchanger adapted to cool a mixed exhaust-gas/charge-air stream that is formed by combining the exhaust-gas stream cooled by the first heat exchanger with a charge-air stream, wherein the first heat exchanger and the second heat exchanger are separate heat exchangers and are formed as a structural unit.”

Heydrich discloses an exhaust gas recirculation system that includes a cooler 42. See Heydrich at col. 2, lines 37-58. Heydrich does not disclose a second heat exchanger, nor does Heydrich disclose that “the first heat exchanger and the second heat exchanger are separate heat exchangers and are formed as a structural unit.” Therefore, Heydrich does not disclose all of the limitations recited by amended claim 3. Withdrawal of this rejection is respectfully requested.

Rejection under 35 U.S.C. § 103

Claims 6 and 7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Wall et al. in view of U.S. Patent No. 5,720,341 (hereafter “Watanabe”). This rejection is respectfully traversed. Claims 6 and 7 have been cancelled. Withdrawal of this rejection is respectfully requested.

Further, Applicants submit that there is neither any motivation nor any technical basis for combining Watanabe with any of the other references. Like the present invention, the Wall, Beck and Heydrich patents relate to exhaust gas recirculation systems containing heat exchangers that are designed to cool very high temperature gases that are traveling at relatively high velocities. There is no teaching or suggestion in any of those references to form the heat exchangers as a structural unit, and in particular, there is no teaching to provide

a mixing chamber for recirculated exhaust gases and charge air that is part of a heat exchanger and can be cooled. On the other hand, Watanabe relates to heat exchangers of a very different design and intended for a completely different use, i.e., "a radiator, a condenser, an evaporator, an intercooler and an engine oil cooler". See column 1, lines 12-14 and column 11, lines 45-48. There is no suggestion in Watanabe to employ the design taught therein in an exhaust gas recirculation system, and indeed, Watanabe does not contain any information regarding how one would apply his teachings in an EGR system environment.

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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